

NOAA CPO MAPP Program Publications 2011-2012

1. Achuthavarier, D., V. Krishnamurthy, B. P. Kirtman and B. Huang, 2012: Role of Indian Ocean in the ENSO-Indian summer monsoon teleconnection in the NCEP climate forecast system. *J. Climate*, (in press).
2. Alaka, G. J., and E. D. Maloney, 2012: The Madden Julian oscillation influence on upstream African easterly wave precursor disturbances during boreal summer. *J. Climate*, 25, 3219-3236.
3. Alexander, M.A., H. Seo, S.-P. Xie, and J.D. Scott, 2012: ENSO's impact on the gap wind regions of the eastern tropical Pacific Ocean. *J. Climate*, in press.
4. Anderson, M. C., C. R. Hain, B. Wardlow, A. Pimstein, J. R. Mecikalski, and W. P. Kustas (2012), A thermal-based Evaporative Stress Index for monitoring surface moisture depletion, in *Remote Sensing for Drought: Innovative Monitoring Approaches*, edited by B. Wardlow and M. C. Anderson, pp. 145-167, CRC Press/Taylor & Francis Boca Raton, FL.
5. Anderson, W. B., B. F. Zaitchik, C. R. Hain, M. C. Anderson, M. T. Yilmaz, J. R. Mecikalski, and L. Schultz (2012), Towards an integrated soil moisture drought monitor for East Africa, *Hydrol. Earth Syst. Sci.*
6. Becker, E. J., E. H. Berbery, and R. W. Higgins, 2011: Modulation of cold season U.S. daily precipitation by the Madden-Julian Oscillation. *J. Climate*, doi: 10.1175/2011JCLI4018.1
7. Benedict, J. J., A. H. Sobel, E. D. Maloney, D. M. Frierson, and L. J. Donner, 2012a: Tropical intraseasonal variability in Version 3 of the GFDL Atmosphere Model. *J. Climate*, accepted pending minor revisions.
8. Benedict, J. J., and D. A. Randall, 2011: Impacts of idealized air-sea coupling on Madden-Julian Oscillation structure in the super-parameterized CAM. *J. Atmos. Sci.*, 68, 1990–2008
9. Benedict, J. J., D. Kim, A. H. Sobel, E.D. Maloney, and D. M. Frierson Interactions Between Local Atmospheric Vertical Structures and the Madden-Julian Oscillation. Proceedings: 30th AMS Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, Florida, 15-20 April, 2012.
10. Bernal, S., L.O. Hedin, G.E. Likens, S. Gerber, and D.C. Buso. 2012. Complex response of the forest nitrogen cycle to climate change. *Proceedings of the National Academy of Sciences*, DOI: 10.1073/pnas.1121448109.

11. Bradley, A. A., and S. S. Schwartz, 2011: Summary Verification Measures and Their Interpretation for Ensemble Forecasts. *Monthly Weather Review*, 139(9), 3075-3089.
12. Brookshire, E.N.J., L.O. Hedin, J.D. Newbold, D.M. Sigman, and J.K Jackson. 2012. Sustained losses of bioavailable nitrogen from montane tropical forests. *Nature Geoscience*, DOI: 10.1038/NGEO1372.
13. Brookshire, E.N.J., S. Gerber, D.N.L. Menge, and L.O. Hedin. 2011. Large losses of inorganic nitrogen from tropical rainforests suggest a lack of nitrogen limitation. *Ecology Letters*, DOI: 10.1111/j.1461-0248.2011.01701.
14. C. Terai, R. Wood, C. Leon and P. Zuidema, 2011: Does precipitation susceptibility vary with increasing cloud thickness in marine stratocumulus? *Atmos. Chem. Phys. Discuss.* doi:10.5194/acpd-11-33379-2011.
15. Cai, M., and B. Huang, 2012: A New Look at the Physics of Rossby Waves: A Mechanical-Coriolis Oscillation. *Journal of the Atmospheric Sciences*, (under revision).
16. Cai, M., and K-K Tung, 2012: Robustness of Dynamical Feedbacks from Radiative Forcing: 2% Solar versus 2xCO₂ Experiments in an Idealized GCM. *Journal of the Atmospheric Sciences*, 69, DOI: 10.1175/JAS-D-11-0117.1
17. Carton J.A., H.F. Seidel, and B.S. Giese, 2012: Detecting historical ocean climate variability, *J. Geophys. Res.*, 117, Article Number: C02023 DOI: 10.1029/2011JC007401.
18. Carvalho, L. M. V., Jones, C., A. N. Posadas, R. Quiroz, B. Bookhagen, and B. Liebmann, 2011: Precipitation characteristics of the South Monsoon System derived from multiple data sets. *Journal of Climate* (In press).
19. Chung, D., and J. Teixeira, 2012: A Simple Model for Stratocumulus to Shallow Cumulus Cloud Transitions. *J. Climate*, 25, 2547-2554.
20. Chung, D., G. Matheou, and J. Teixeira, 2012: Steady-state Large-Eddy Simulations to study the stratocumulus to shallow-cumulus cloud transition. *J. Atmos. Sci.*, in press.
21. Clark, M.P., D. Kavetski, and F. Fenicia, 2011: Pursuing the method of multiple working hypotheses for hydrological modeling. *Water Resources Research*, 47, W09301, doi:10.1029/2010 WR009827.
22. D. Kim, A.H. Sobel, A. Del Genio, Y. Chen, S.J. Camargo, M.-S. Yao, M. Kelley, and L. Nazarenko, 2012. The tropical subseasonal variability simulated in the NASA GISS general circulation model, *J. Climate*, early online, doi: 10.1175/

- JCLI-D-11-00447.1.
23. Davis, T.W., X. Liang, Observations, measurements and best practices for monitoring hydraulic redistribution, American Geophysical Union Fall meeting, San Francisco, CA, Dec. 5-9, 2011.
 24. De Sales, F. and Y. Xue, 2011: Assessing the Dynamic Downscaling Ability over South America using a Precipitation Verification Approach. *Int. J. of Climatology*. 31: 1205-1221. DOI: 10.1002/joc.2139
 25. Dechant, C.M., and Moradkhani, H., "Examining the Effectiveness and Robustness of Data Assimilation Methods for Calibration and Quantification of Uncertainty in Hydrologic forecasting ", *Water Resources Research*, vol. 48, W04518, doi:10.1029/2011WR011011, 2012.
 26. DiNezio, P. N., B. P. Kirtman, A. C. Clement, S.-K. Lee, G. A. Vecchi, A. Wittenberg, 2012: Diverging ENSO projection in response to global warming: The role of the background ocean changes. *J. Climate* (in press).
 27. Dong, J. and W. Ni-Meister, (2012): Analysis of diurnal boundary layer development in boreal forests: measurements and simulations, *J Plant Ecol*, 5(2): 191-205. doi: 10.1093/jpe/rtr001
 28. Feng, S., Q. Hu, and R.J. Oglesby, 2010: Influence of Atlantic sea surface temperature on persistent drought in the North America. *Climate Dynamics*, 37, 569-586, doi:10.1007/s00382-010-0835-x.
 29. Frierson, D., D.-H. Kim, I.-S. Kang, M.-I. Lee, and J. L. Lin. 2011: Structure of AGCM-Simulated Convectively Coupled Kelvin Waves and Sensitivity to Convective Parameterization. *J. Atmos. Sci.*, 68, 26-45.
 30. Furtado, J. C., J. L. Cohen, A. H. Butler, E. E. Riddle, and A. Kumar, 2012: Eurasian snow cover, winter climate, and stratosphere-troposphere coupling in the CMIP5 models. *J. Climate*, in prep.
 31. Gao, Y., Y. Xue, W. Peng, H.-S. Kang, and D. Waliser, 2011: Assessment of Dynamic Downscaling of the Extreme Rainfall over East Asia Using Regional Climate Model. *Advance in Atmospheric Sciences*, 28, 1077–1098.
 32. Gerber, S., Hedin, L.O., Keel, S.G., Pacala, S.W., and Shevliakova, E. 2012. Land use and nitrogen feedbacks constrain the trajectory of the land carbon sink. *Nature* (in review).
 33. Gerber, S., Hedin, L.O., Oppenheimer, M., Pacala, S.W., and Shevliakova, E. 2010. Nitrogen cycling and feedbacks in a global dynamic land model. *Global Biogeochemical Cycles* 24, GB1001, doi 10.1029/2008GB003336.

34. Goddard, L., J. W. Hurrell, B. P. Kirtman, J. Murphy, T. Stockdale and C. Vera, 2012: Two timescales for the price of one (almost). *Bull. Amer. Met. Soc.*, (in press).
35. Goetz, S. J., B. Bond-Lamberty, B. E. Law, J. A. Hicke, C. Huang, R. A. Houghton, S. McNulty, T. O'Halloran, M. Harmon, A. J. H. Meddens, E. M. Pfeifer, D. Mildrexler, and E. S. Kasischke, 2012: Observations and assessment of forest carbon dynamics following disturbance in North America. *Journal of Geophysical Research-Biogeosciences*. In press.
36. Goswami, B. B., N. J. Mani, P. Mukhopadhyay, D. Waliser, J. Benedict, E. Maloney, M. Khairoutdinov, and B. N. Goswami, 2011: Monsoon intraseasonal oscillations as simulated by the superparameterized Community Atmospheric Model. *J. Geophys. Res.*, 116, D22104, doi:10.1029/2011JD015948.
37. H. Annamalai, K.P. Sooraj, A. Kumar and H. Wang, 2011: Feasibility of Dynamical Seasonal Precipitation Prediction for the Pacific Islands, *Science and Technology Infusion Climate Bulletin*, NOAA's National Weather Service.
38. H. Hsu, J. Li, and S. Sorooshian, 2011: Improve soil moisture estimation in arid/semi-arid region using In-situ and remote sensing information. *Paddy and Water Environment Journal*, DOI10.1007/s10333-011-0308-9.
39. H.A. Ramsay, S.J. Camargo, and D. Kim, 2012. Cluster Analysis of tropical cyclone tracks in the southern hemisphere, *Clim. Dyn.*, early online, doi: 10.1007/s00382-011-1225-8.
40. Habib, M., A. A. Bradley, S. S. Schwartz, and A. Kruger, 2011: Verification of NWS Ensemble River Forecasts for the Des Moines River Basin. *Journal of Hydrometeorology* (in review).
41. Hain, C. R., W. T. Crow, M. C. Anderson, and J. R. Mecikalski (2012), An EnKF dual assimilation of thermal-infrared and microwave satellite observations of soil moisture into the Noah land surface model, *Water Resources Res.*
42. Hannah, W. M., and E. D. Maloney, 2011: The role of moisture-convection feedbacks in simulating the Madden-Julian oscillation. *J. Climate*, 24, 2754-2770.
43. Hayes, M. J., M. D. Svoboda, B. D. Wardlow, M. C. Anderson, and F. N. Kogan (2012), Drought monitoring - Historical and current perspectives, in *Remote Sensing of Drought*, edited by B. D. Wardlow, M. C. Anderson and J. P. Verdin, pp. 1-19, CRC Press/Taylor and Francis, Boca Raton, FL.
44. Hu, Q., and S. Feng, 2010: Influence of Arctic oscillation on Central U.S. summer rainfall. *J. Geophys. Res.*, 115, D01102, doi:10.1029/2009JD011805.

45. Hu, Q., and S. Feng, 2012: AMO- and ENSO-driven summertime circulation and precipitation variations in North America. *J. Climate* (in press)
46. Hu, Q., S. Feng, and R.J. Oglesby, 2011: Variations in North American summer precipitation driven by the Atlantic Multidecadal Oscillation. *J. Climate*, 24, 5555-5570.
47. Jiang, X., M. Zhao, and D. E. Waliser, 2011: Modulation of tropical cyclone activity by the tropical intraseasonal variability over the Eastern Pacific in a high resolution GCM, *Journal Climate*, in press.
48. Jin, J., and L. Wen, 2012: Evaluation of snowmelt simulation in the Weather Research and Forecasting Model. *Journal of Geophysical Research*. 117, D10, DOI:10.1029/2011JD016980.
49. Jin, J., and N. L. Miller. 2011. Improvement of snowpack simulations in a regional climate model. *Hydrological Processes* 25: 2202-2210, DOI: 10.1002/hyp.7975.
50. Jones, C., and L. M. V. Carvalho, 2011: Spatial-intensity variations in extreme precipitation in the contiguous United States and the Madden-Julian Oscillation. *Journal of Climate* (In press).
51. Jones, C., J. Gottschalck, L. M. V. Carvalho, and W. Higgins, 2011: Influence of the Madden-Julian Oscillation on forecasts of extreme precipitation in the contiguous United States. *Monthly Weather Review*, 139, 332-350.
52. Jones, C., L. M. V. Carvalho, and B. Liebmann, 2012: Forecast skill of the South American Monsoon System. *Journal of Climate*, 25, 1883-1889.
53. Jones, C., L. M. V. Carvalho, J. Gottschalck and W. Higgins, 2011: The Madden-Julian Oscillation and the relative value of deterministic forecasts of extreme precipitation in the contiguous United States. *Journal of Climate*, 24, 2421-2428.
54. Junquas, C., C. S. Vera, L. Li, and H. Le Treut, 2011: Summer precipitation variability over southeastern South America in a global warming scenario. *Climate Dynamics* (in press).
55. Justin Sheffield; Julio E. Herrera-Estrada; Kelly K. Caylor; Eric F. Wood (2011), Drought, Climate Change and Potential Agricultural Productivity (Invited), Abstract GC11C-05 presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec.

56. K. Geil, and Y. Serra, 2012: Precipitation Patterns in the Inter-Americas Sea and North American Monsoon Regions on Seasonal to Interannual Time Scales in Select IPCC AR5 Models for the 20th Century. *J. Clim*, in progress.
57. Karnauskas, K.B., A. Giannini, R. Seager, and A.J. Busalacchi (2012) A simple mechanism for the climatological midsummer drought along the Pacific coast of Central America. *Atmósfera*, in revision.
58. Karnauskas, K.B., A. Giannini, R. Seager, and A.J. Busalacchi (2012) The interannual variability of the midsummer drought along the Pacific coast of Central America and southern Mexico. In prep.
59. Kim, D., A. H. Sobel, and I.-S. Kang, 2011: A mechanism denial study on the Madden-Julian oscillation. *J. Adv. Model. Earth Sys.*, 3, M12007, DOI:10.1029/2011MS000081.
60. Kim, D., A. H. Sobel, E. D. Maloney, D. M. W. Frierson, and I.-S. Kang, 2011: A systematic relationship between intraseasonal variability and mean state bias. *J. Climate*, 24, 5506-5520.
61. Kim, H. M., P. J. Webster, J.A. Curry and V. Toma 2012: Asian summer monsoon prediction in ECMWF System 4 and NCEP CFSv2 retrospective seasonal forecasts, *Climate Dynamics*, DOI: 10.1007/s00382-012-1470-5.
62. Kim, H. M., P. J. Webster, J.A. Curry, 2012: Seasonal prediction skill of ECMWF System 4 and NCEP CFSv2 retrospective forecast for the Northern Hemisphere Winder, *Climate Dynamics*, DOI: 10.1007/s00382-012-1364-6.
63. Kim, S. T. and J.-Y. Yu, 2012: The Two Types of ENSO in CMIP5 Models, *Geophysical Research Letters*, 39, L11704, doi:10.1029/2012GL052006.
64. Kim, S. T., J.-Y. Yu, A. Kumar, and H. Wang, 2012: Examination of the Two Types of ENSO in the NCEP CFS Model and Its Extratropical Associations, *Monthly Weather Review*, 140, 1908-1923.
65. Kim, S. T., J.-Y. Yu, and M.-M. Lu, 2012: Distinct Behaviors of Pacific and Indian Ocean Warm Pool Properties on Seasonal and Interannual Timescales, *Journal of Geophysical Research*, In Press.
66. Kiranmayi, L., and E .D. Maloney, 2011: The intraseasonal moist static energy budget in reanalysis data. *J. Geophys. Res.*, 116, D21117, doi:10.1029/2011JD016031.
67. Kiranmayi, L., and E. D. Maloney, 2011: Understanding intraseasonal variability in an aquaplanet GCM. *J. Meteor. Soc. Japan*, 89, 195-210, doi:10.2151/jmsj.2011-302.

68. Kirtman, B. P., and co-authors, 2012: Impact of ocean model resolution on CCSM climate simulations. *Climate Dynamics* (in press).
69. Kirtman, B. P., E. K. Schneider, D. M. Straus, D. Min, R. Burgman, 2011: How weather impacts the forced climate response. *Climate Dynamics*, DOI : 10.1007/s00382-011-1084-3.
70. Kkiuchi, K., B. Wang, and Y. Kajikawa, 2012: Bimodal representation of the Tropical intraseasonal osciilation. *Climate Dynamics*, DOI 10.1007/s00382-011-1159-.
71. Krakauer, N., 2012. Estimating Climate Trends: Application to United States Plant Hardiness Zones. *Advances in Meteorology*, 2012, doi: 10.1155/2012/404876.
72. Larson, S., S.-K. Lee, C. Wang, E.-S. Chung, and D. Enfield, 2012: Impacts of non-canonical El Niño patterns on Atlantic hurricane activity. *Geophys. Res. Lett.*, revised.
73. Lee, S. –K., W. Park, E. van Sebille, M. O. Baringer, C. Wang, D. B. Enfield, S. G. Yeager, B. P. Kirtman, 2011: What caused the significant increase in Atlantic Ocean heat content since the mid-20th century. *Geophys. Res. Lett.*, doi:10.1029/2011GL048856, 201.
74. Lee, S.-K., D. B. Enfield and C. Wang, 2011: Future impact of differential inter-basin ocean warming on Atlantic hurricanes. *J. Climate*, 24 (4), 1264-1275.
75. Lee, S.-K., R. Atlas, D. B. Enfield, C. Wang, and H. Liu, 2012: Is there an optimal ENSO pattern that enhances large-scale atmospheric processes conducive to major tornado outbreaks in the U. S.? *J. Climate*, revised.
76. Lee, S.-K., W. Park, E. van Sebille, M. O. Baringer, C. Wang, D. B. Enfield, S. Yeager, and B. P. Kirtman, 2011: What caused the significant increase in Atlantic Ocean heat content since the mid-20th century? *Geophys. Res. Lett.*, 38, L17607, doi:10.1029/2011GL048856.
77. Li, J., S.-P. Xie, E. R. Cook, G. Huang, R. D'Arrigo, F. Liu, J. Ma and X. Zheng, 2011: Interdecadal modulation of El Nino amplitude during the past millennium. *Nature Climate Change*, 1, 114-118, doi:10.1038/nclimate1086.
78. Liang, X.-Z., M. Xu, X. Yuan, T. Ling, H. I. Choi, F. Zhang, L. Chen, S. Liu, S. Su, F. Qiao, Y. He, J. X. L. Wang, K. E. Kunkel, W. Gao, E. Joseph, V. Morris, T. W. Yu, J. Dudhia and J. Michalakes, 2012: Regional Climate-Weather Research and Forecasting Model (CWRF). *Bulletin of the American Meteorological Society* (in press), doi: 10.1175/BAMS-D-11-00180.1.

79. Liebmann, B., G. N. Kiladis, D. Allured, C. S. Vera, C. Jones, L. M. V. Carvalho, C. S. Vera, I. Bladé, and P. González, 2011: Mechanisms associated with large daily rainfall events in Northeast Brazil. *J. Climate*, 24, 376-396.
80. Liebmann, B., I. Bladé, G. N. Kiladis, L. M. V. Carvalho, G. Senay, D. Allured, S. Leroux, and Chris Funk, 2012: Seasonality of African precipitation from 1996-2009. *J. Climate* (in press).
81. Lin H. and G. Brunet, 2011: Impact of the North Atlantic Oscillation on the forecast skill of the Madden-Julian Oscillation. *Geophys. Res. Lett.*, 38, L02802, doi:10.1029/2010GL046131, 2011.
82. Lintner, B. R., C. E. Holloway and J. D. Neelin: Column water vapor statistics and their relationship to deep convection and vertical horizontal circulation, and moisture structure at Nauru. *J. Climate*, 24, 5454-5466, doi: 10.1175/JCLI-D-10-05015.1.
83. Liu, H., C. Wang, S.-K. Lee, and D. B. Enfield, 2012: Atlantic warm pool variability in the IPCC-AR4 twentieth-century climate simulations. *J. Climate*, in press.
84. Luo, L. and Y. Zhang, 2012: Did we see the 2011 summer heat wave coming?, *Geophys. Res. Lett.*, 39, L09708, doi:10.1029/2012GL051383.
85. Luo, X., X. Liang, An assessment of the effects of vegetation on water and energy budgets over an extended period of drought, American Geophysical Union Fall meeting, San Francisco, CA, Dec. 5-9, 2011.
86. Lyon, B., M.A. Bell, M.K. Tippett, A. Kumar, M.P. Hoerling, X.W. Quan and H. Wang, 2012: Baseline Probabilities for the Seasonal Prediction of Meteorological Drought. *Journal of Applied Meteorology and Climatology*. (accepted).
87. M. Biasutti, A.H. Sobel, S.J. Camargo, and T.T. Creyts, 2012. Projected changes in the physical climate of the Gulf Coast and Caribbean, *Climatic Change*, 112, 819-845, doi: 10.1007/s10584-011-0255-y
88. M.K. Tippett, A.H. Sobel, and S.J. Camargo, 2012. Association of monthly U.S. tornado occurrence with large-scale atmospheric parameters, *Geophys. Res. Lett.*, 39, L02801, doi: 10.1029/2011GL050368.
89. Ma, J., S.-P. Xie, and Y. Kosaka, 2012: Mechanisms for tropical tropospheric circulation change in response to global warming. *J. Climate*, 25, 2979–2994.

90. Madadgar, S., Moradkhani, H., and Garen, D., "Towards Improved Reliability and Reduced Uncertainty of Hydrologic Ensemble Forecasts Using Multivariate Post-processing", *Hydrological Processes*, in review.
91. Meddens, A. J. H., J. A. Hicke, and C. Ferguson, 2012: A gridded forest bark beetle disturbance data set for western US and British Columbia derived from aerial survey databases, *Ecological Applications*, in press.
92. Meddens, A. J. H., J. A. Hicke, and L. A. Vierling, 2011: Evaluating the potential of multispectral imagery to map multiple stages of tree mortality, *Remote Sensing of Environment*, 115:1632-1642.
93. Meng, J., R. Yang, H. Wei, M. Ek, G. Gayno, P. Xie, and K. Mitchell, 2012, The Land Surface Analysis in the NCEP Climate Forecast System Reanalysis, *J. Hydromet.*, in press, doi:10.1175/JHM-D-11-090.1.
94. Mo, K. C: 2011: Drought onset and recovery over the United States. *J. Geophys. Res.* Doi:10.1029:/2011JD016168
95. Moon, J.-Y., B. Wang, and K.-J. Ha, 2012: Modulation on 2009/10 winter snowstorms in the United States. *Journal of Climate, J. Climate*, 25, 978-991. DOI: 10.1175/JCLI-D-11-00033.1.
96. Munoz, E., and D. B. Enfield, 2011: The boreal spring variability of the Intra-Americas low-level jet and its relation with precipitation and tornadoes in the eastern United States. *Climate Dynamics*, 36, DOI 10.1007/s00382-009-0688-3.
97. Munoz, E., B. Kirtman, and W. Weijer, 2011: Varied representation of the Atlantic Meridional Overturning across multidecadal ocean reanalyses. *Deep Sea Research Part II*, doi:10.1016/j.dsr2.2010.10.064.
98. Najafi, M.R., Moradkhani, H., and Piechota, T., “Ensemble Streamflow Prediction: Climate Signal Weighting vs. Climate Forecast System Reanalysis” *Journal of Hydrology*, 442 –443 (2012) 105–116.
99. Nakamura, J.A., U. Lall, Y. Kushnir, A.W. Robertson, and R. Seager: Dynamical structure of major spring floods in the U.S. Midwest, *J. Hydrometeorology*, in revision
100. Nigam, S., B. Guan, and A. Ruiz-Barradas, 2011: Key Role of the Atlantic Multidecadal Oscillation in 20th Century Drought and Wet Periods over the Great Plains. *Geophys. Res. Lett.*, 38, L16713, doi:10.1029/2011GL048650.
101. Oglesby, R.J., S. Feng, Q. Hu, and C. Rowe, 2011: Medieval drought in North America: The role of the Atlantic Multidecadal Oscillation. *PAGES News*, 19, 18-20.

102. Oglesby, R.J., S. Feng, Q. Hu, and C. Rowe, 2012: The role of the Atlantic Multidecadal Oscillation on Medieval drought in North America: Synthesizing results from proxy data and climate models. *Global and Planetary Change*, v. 84-85, 56-65.
103. Optimal Initial Perturbations for Ensemble Prediction of the Madden-Julian Oscillation during Boreal Winter”, Ham, Yoo-Geun, Siegfried Schubert, and Yehui Chang, In press, *J. Climate*, 2012.
104. P. Zuidema, D. Leon, A. Pazmany and M. Cadeddu, 2012: Aircraft millimeter-wave passive sensing of cloud liquid water and water vapor during VOCALS-REx. *Atmos. Chem. Phys.*, 12, pp. 355-369, doi:10.5194/acp-12-355-2012.
105. Painemal, D. and P. Zuidema, 2011: Assessment of MODIS cloud effective radius and optical depth retrievals over the Southeast Pacific with VOCALS-REx in-situ measurements. *J. Geophys. Res.*, 116, D24206, doi:10.1029/2011JD016155.
106. Paolino, Daniel A., James L. Kinter, Ben P. Kirtman, Dughong Min, David M. Straus, 2012: The Impact of Land Surface and Atmospheric Initialization on Seasonal Forecasts with CCSM. *J. Climate*, 25, 1007–1021. doi:10.1175/2011JCLI3934.1.
107. Parrish, M., Moradkhani, H., and DeChant C.M. “Towards Reduction of Model Uncertainty: Integration of Bayesian Model Averaging and Data Assimilation”, *Water Resources Research*, 48, W03519, doi:10.1029/2011WR011116.
108. Peters-Lidard, C.D., S.V. Kumar, D.M. Mocko, and Y. Tian, 2011: Estimating evapotranspiration with land data assimilation systems. *Hydrological Processes*, 25(26), 3979-3992, doi: 10.1002/hyp.8387.
109. Quan, X., M.P Hoerling, B. Lyon, A. Kumar, M.A. Bell, M.K. Tippett, and H. Wang, 2012: Prospects for Dynamical Prediction of Meteorological Drought. *Journal of Applied Meteorology and Climatology* (accepted).
110. R.L. Korty, S.J. Camargo, and J. Galewsky, 2012. Tropical cyclone genesis factors in simulations of the Last Glacial Maximum, *J. Climate*, early online, doi: 10.1175/ JCLI-D-11-00517.1
111. R.L. Korty, S.J. Camargo, and J. Galewsky, 2012. Variations in Tropical cyclone genesis factors in simulations of the Holocene Epoch, *J. Climate*, accepted, June (2012).

112. Rauscher, S. A., F. Kucharski, and D. B. Enfield, 2011: The role of regional SST warming variations in the drying of Meso-America in future climate projections, *J. Climate*, 24, 2003-2016, doi: 10.1175/2010JCLI3536.1
113. Richter, I., S.-P. Xie, A.T. Wittenberg, and Y. Masumoto, 2012: Tropical Atlantic biases and their relation to surface wind stress and terrestrial precipitation. *Clim. Dyn.*, 38, 985-1001, doi:10.1007/s00382-011-1038-9.
114. Ruff, T. W., and J. D. Neelin, 2012: Long tails in regional surface temperature probability distributions with implications for extremes under global warming, *Geophys. Res. Letts.*, 39, L04704, doi:10.1029/2011GL050610.
115. Ruiz-Barradas, S. Nigam, 2012: Pentad Analysis of Summer Precipitation Variability over the Southern Great Plains and its Relationship with the Land-surface. Major revisions, *J. Climate*.
116. S. de Szoeke, S. Yuter, D. Mecham, C. W. Fairall, C. Burleyson and P. Zuidema, revised (April, 2012): Observations of stratocumulus clouds and their effect on the eastern Pacific surface heat budget along 20S. *J. Climate*
117. S. Sorooshian, J. Li, K. Hsu, and X. Gao, 2012: Influence of irrigation schemes used in RCMs on ET estimation: Results and comparative studies from California's Central Valley agricultural regions. *J. Geophys. Res.*, 117, D06107, doi:10.1029/2011JD016978.
118. S.J. Camargo, 2011. Tropical Cyclones, Western North Pacific Basin, in State of the Climate in 2010, J. Blunden, D.S. Arndt, and M.O. Baringer (editors), *Bull. Amer. Meteor. Soc.*, 92, S123-S127.
119. S.J. Camargo, 2012. Tropical Cyclones, Western North Pacific Basin, in State of the Climate in 2011, J. Blunden and D.S. Arndt (editors), *Bull. Amer. Meteor. Soc.*, 93, S107-S109.
120. Sahany, S., J. D. Neelin, K. Hales, and R. Neale, 2012: Temperature-moisture dependence of the deep convective transition as a constraint on entrainment in climate models. *J. Atmos. Sci.*, 69, 1340-1358, 2012.
121. Serra, Y.L., and K. Geil, 2012: Historical and Projected Tropical East Pacific Storm Track Statistics in Select IPCC AR5 Models. *J. Clim.*, in progress.
122. Shaman, J., and E. D. Maloney, 2012: Shortcomings in climate model simulations of the ENSO-Atlantic hurricane teleconnection. *Climate Dynamics*, 38, 1973-1988.
123. Sheffield, J., B. Livneh, and E. F. Wood, 2012a: Representation of terrestrial hydrology and large scale drought of the Continental US from the North

- American Regional Reanalysis. *J. Hydromet.*, early online release, doi:10.1175/JHM-D-11-065.1
124. Shinoda, T, 2012: Observation of First and Second Baroclinic Mode Yanai Waves in the Ocean., *Q. J. R. Meteorol. Soc.*, 137, DOI:10.1002/qj.968.
125. Shinoda, T, H. E. Hurlbert, E. J. Metzger, 2011: Anomalous Tropical Ocean Circulation associated with La Nina Modoki., *J. Geophys. Res. Oceans*, 116, doi:10.1029/2011JC007304.
126. Siqueira, L. S. P., and B. P. Kirtman, 2012: Predictability and uncertainty in a low order coupled model. *Nonlinear Process in Geophysics* (in press).
127. Small, R. J., S.-P. Xie, E. D. Maloney, S. P. deSzoeke, and T. Miyama, 2011: Intraseasonal Variability in the far-east Pacific: Investigation of the role of air-sea coupling in a regional coupled model. *Clim. Dyn.*, 36, 867–890, DOI 10.1007/s00382-010-0786-2.
128. Smith, D. M., A. A. Scaife and B. Kirtman, 2012: What is the current state of scientific knowledge with regard to seasonal and decadal forecasting. *Environ. Res. Lett.*, 7 015602, doi:10.1088/1748-9326/7/1/015602.
129. Sobel, A. H., and E. D. Maloney, 2012: An idealized semi-empirical framework for modeling the Madden-Julian oscillation, *J. Atmos. Sci.*, 69, 1691-1705.
130. Solomon, Amy, and Coauthors (... B. P. Kirtman ...), 2011: Distinguishing the Roles of Natural and Anthropogenically Forced Decadal Climate Variability. *Bull. Amer. Meteor. Soc.*, 92, 141– 156. doi: 10.1175/2010BAMS2962.1
131. Song, Z., F. Qiao, X. Lei, and C. Wang, 2012: Influence of parallel computational uncertainty on simulations of the coupled general climate model. *Geoscientific Model Development*, 5, 313-319.
132. Sooraj, K.P., H. Annamalai, A. Kumar and H. Wang, 2012: A comprehensive assessment of CFS hindcast and forecast skills over the tropics. *Weather and Forecasting*, 27, 3-27.
133. Sorooshian, S., J. Li, K. Hsu, and X. Gao, 2011: How significant is the impact of irrigation on local hydroclimate in California's Central Valley? Comparison of model results with ground observation and remote-sensing data. *J. Geophys. Res.*, 116, D06102, doi:10.1029/2010JD014775, 2011

134. Stechmann, S. and J. D. Neelin, 2011: A stochastic model for the transition to strong convection. *J. Climate*, 68, 2955-2970, doi:10.1175/JAS-D-11-028.1.
135. Stroeve, J., Kattsov, V., Barrett, A., Serreze, M., Pavlova, T., Holland, M., and Meier, W., 2012. Trends in Arctic sea ice extent from CMIP5, CMIP3 and observations. *Geophysical Research Letters*.
136. Suselj, K., J. Teixeira, and D. Chung, 2012: A unified model for moist convective boundary layers based on a stochastic Eddy-Diffusivity/Mass-Flux parameterization. *J. Atmos. Sci.*, in review.
137. Suselj, K., J. Teixeira, and G. Matheou, 2012: Eddy Diffusivity/Mass Flux and Shallow Cumulus Boundary Layer: An Updraft PDF Multiple Mass Flux Scheme. *J. Atmos. Sci.*, 69, 1513-1533.
138. Teng., H., and G. Branstator: A zonal wavenumber-3 pattern of North Hemisphere wintertime planetary wave variability at high latitudes. *J. Climate*, accepted.
139. Turner, A., and Annamalai, H., 2012: Climate change and the South Asian summer monsoon. *Nature Climate Change*. 10.1038/NCLIMATE1495
140. Van Roekel, L. P., and E. D. Maloney, 2012: Mixed layer modeling in the east Pacific warm pool during 2002. *Climate Dynamics*, in press.
141. Waliser, D. E., 2011: Predictability and Forecasting. *Intraseasonal Variability of the Atmosphere-Ocean Climate System*, W. K. M. Lau and D. E. Waliser, Eds., Springer, Heidelberg, Germany 2nd Edition, In Press.
142. Waliser, D.E., J. Kim, Y. Xue, Chao, Y., A. Eldering, R. Fovell, A. Hall, Q. Li, K. Liou, J. McWilliams, S. Kapnick, R. Vasic, Fs. De Sale, and Y. Yu, 2011, Simulating the Sierra Nevada snowpack: The impact of snow albedo and multi-layer snow physics, *Climatic Change*, 109, S59-S117, DOI 10.1007/s10584-011-0312-5
143. Wang, B., 2011: Theory. *Intraseasonal Variability of the Atmosphere-Ocean Climate System*, W. K. M. Lau and D. E. Waliser, Eds., Springer, Heidelberg, Germany 2nd Edition, In Press.
144. Wang, C., 2012: Atlantic multidecadal oscillation (AMO) [in “State of the Climate in 2011”]. *Bull. Amer. Meteor. Soc.*, in press.
145. Wang, C., C. Deser, J.-Y. Yu, P. DiNezio, and A. Clement, 2012: El Niño-Southern Oscillation (ENSO): A review. In *Coral Reefs of the Eastern Pacific*, P. Glynn, D. Manzello, and I. Enochs, Eds., Springer Science Publisher, in press.

146. Wang, C., H. Liu, S.-K. Lee, and R. Atlas, 2011: Impact of the Atlantic warm pool on United States landfalling hurricanes. *Geophys. Res. Lett.*, 38, L1907, doi:10.1029/2011GL049265.
147. Wang, C., S. Dong, A. T. Evan, G. R. Foltz, and S.-K. Lee, 2012: Multidecadal co-variability of North Atlantic sea surface temperature, African dust, Sahel rainfall and Atlantic hurricanes. *J. Climate*, in press.
148. Wang, X., C. Wang, W. Zhou, D. Wang, and J. Song, 2011: Teleconnected influence of North Atlantic sea surface temperature on the El Niño onset. *Climate Dynamics*, 37, 663-676, doi:10.1007/s00382-010-0833-z.
149. Wardlow, B. D., M. C. Anderson, and J. P. Verdin (Eds.) (2012), Remote sensing of drought - innovative monitoring approaches, 422 pp., CRC Press/Taylor and Francis, Boca Raton, FL.
150. Wardlow, B. D., M. C. Anderson, J. Sheffield, B. D. Doorn, J. P. Verdin, X. Zhan, and M. Rodell (2012), Future opportunities and challenges in remote sensing of drought, in *Remote Sensing for Drought: Innovative Monitoring Approaches*, edited by C. P. T. a. Francis, pp. 389-409, Boca Raton, FL.
151. Wiedinmyer, C., M. Barlage, M. Tewari, F. Chen, 2012: Meteorological Impacts of Forest Mortality due to Insect Infestation in Colorado. *Earth Interact.*, 16, 1-11. doi:10.1175/2011EI419.1
152. Witek, M.L, J. Teixeira, and G. Matheou, 2011: An eddy-diffusivity/mass-flux approach to the vertical transport of turbulent kinetic energy in convective boundary layers. *J. Atmos. Sci.*, 68, 2385-2394.
153. Witek, M.L., J. Teixeira, and G. Matheou, 2011: An integrated TKE based eddydiffusivity/ mass-flux boundary layer scheme for the dry convective boundary layer. *J. Atmos. Sci.*, 68, 1526-1540.
154. Wood, E.F., X. Yuan, and J.K. Roundy, 2011: Enhancing Hydrological Seasonal Forecast by Downscaling CFSv2. *NWS Science & Technology Infusion Climate Bulletin*, 110-115.
155. Wood, R., C. S. Bretherton, D. Leon, A. D. Clarke, P. Zuidema, G. Allen and H. Coe, 2011: An aircraft case study of the spatial transition from closed to open mesoscale cellular convection over the Southeast Pacific. *Atmos. Chem. Phys.*, 11, pp. 2341-2370. doi:10.5194/acp-11/2341-2011.
156. Wright, S.J., J.B. Yavitt., N. Wurzburger, B.L. Turner, E.V.J. Tanner, E.J. Sayer, L.S. Santiago, M. Kaspari, L.O. Hedin, K.E. Harms, M.N. Garcia, and M.D. Corre. 2011. Potassium, phosphorus or nitrogen limit root allocation, tree

- growth and litter production in a lowland tropical forest. *Ecology* 92(8): 1616–1625.
157. Wu, R., and B. P. Kirtman, 2011: Caribbean Sea rainfall variability during the rainy season and relationship to the equatorial Pacific and tropical Atlantic SST. *Climate Dynamics*, 37, 1533-1550.
158. Xue L., A. Teller, R. Rasmussen, I. Geresdi, Z. Pan, X. Liu, 2012: Effects of aerosol solubility and regeneration on mixed-phase orographic clouds and precipitation. *J. Atmospheric Science*. doi: 10.1175/JAS-D-11-098.1.
159. Xue, Y., R. Vasic, Z. Janjic, Y. M. Liu, and P. C. Chu, 2012: The impact of spring subsurface soil temperature anomaly in the Western U.S. on North American summer precipitation – a case study using regional climate model downscaling. *Journal Geophysical Research*. 117, D11103, doi:10.1029/2012JD017692
160. Yeh, S.-W., B. P. Kirtman, J.-S. Kug, W. Park, and M. Latif (2011), Natural variability of the central Pacific El Niño event on multi-centennial timescales, *Geophys. Res. Lett.*, 38, L02704, doi:10.1029/2010GL045886.
161. Yilmaz, M. T., W. T. Crow, M. C. Anderson, and C. R. Hain (2012), An objective methodology for merging satellite and model-based soil moisture products, *Water Resources Res.*
162. Yu, W., W. Han, D. Gochis, E.D. Maloney, and S.-P. Xie, 2011: Observations of eastward propagation of atmospheric intraseasonal oscillations from the Pacific to the Atlantic. *J. Geophys. Res.*, 116, D02101.
163. Yu., J.-Y., Y. Zou, S. T. Kim, and T. Lee, 2012: The Changing Impact of El Niño on US Winter Temperatures, *Geophysical Research Letters*, In Press.
164. Yuan, X., E. F. Wood, L. Luo, and M. Pan, 2011: A first look at Climate Forecast System version 2 (CFSv2) for hydrological seasonal prediction. *Geophys. Res. Lett.*, 38, L13402, doi:10.1029/2011GL047792.
165. Yuan, X., X.-Z. Liang, and E.F. Wood, 2011: WRF ensemble downscaling seasonal forecasts of China winter precipitation during 1982-2008. *Clim. Dyn.*, doi:10.1007/s00382-011-1241-8, in press.
166. Zhang, L., C. Wang, and L. Wu, 2012: Low-frequency modulation of the Atlantic warm pool by the Atlantic multidecadal oscillation. *Climate Dynamics*, in press.
167. Zhao, L., J. Jin, and S. Y. Wang, M. B. Ek, 2012: Integration of remote-sensing data with WRF to improve lake effect precipitation simulations over

- the Great Lakes Region. *Journal of Geophysical Research*. 117, D09102, DOI:10.1029/2011JD016979.
168. Zheng, Y., J-L Lin, and T. Shinoda 2012: The Equatorial Cold Tongue Simulated by IPCC AR4 Coupled GCMs: Upper Ocean Heat Budget and Feedback Analysis, *J. Geophys. Res.-Oceans.*, 117, C05024, doi:10.1029/2011JC007746.
169. Zheng, Y., T. Shinoda, J.-L. Lin, and G. N. Kiladis, 2011: Sea surface temperature biases under the stratus cloud deck in the southeast Pacific Ocean in 19 IPCC AR4 coupled general circulation models. *J. Climate*. 24, 4139-4164.
170. Zuidema, P., Z. Li, R. Hill, L. Bariteau, B. Rilling, C. Fairall, A. Brewer, B. Albrecht, J. Hare, 2012: On trade-wind cumulus cold pools. *J. Atmos. Sci.*, 69, pp. 258-277, doi:10.1175/jas-d-11-0143
171. Moradkhani, H., C. M. DeChant, and S. Sorooshian, Evolution of ensemble data assimilation for uncertainty quantification using the Particle Filter-Markov Chain Monte Carlo method, *Water Resour. Res.*, doi:10.1029/2012WR012144, in press.
- From CIMAS
172. Halliwell, G. R., L. K. Shay, J. Brewster, and W. J. Teague, 2011: Evaluation and sensitivity analysis to an ocean model response to hurricane Ivan. *Mon. Wea. Rev.*, 139, 921-945.
173. Jaimes, B., L. K. Shay, and G. R. Halliwell, 2011: The response of quasi-geostrophic oceanic vortices to tropical cyclone forcing. *J. Phys. Oceanogr.*, 41, doi:10.1175/JPO-D-11-06.1, (In Press).
174. Meyers, P. C., 2011: Development and analysis of the Systematically Merged Atlantic Regional Temperature and Salinity (SMARTS) climatology for satellite-derived ocean thermal structure. M. S. Thesis, University of Miami, Coral Gables, FL, 33134, 99 pp.
175. Shay, L. K., B. Jaimes, J. K. Brewster, P. Meyers, C. McCaskill, E. W. Uhlhorn, F. D. Marks, G. R. Halliwell, O. M. Smedsted and P. Hogan, 2011: Airborne surveys of the Loop Current complex from NOAA WP-3D during the Deep Water Horizon oil spill. Eds, Y. Liu and D. Streets, AGU Monograph Special Issue, Monitoring and Modeling Deep Water Horizon Oil Spill, (In Press)
176. Uhlhorn, E., and L. K. Shay, 2011: Loop Current mixed layer response to hurricane Lili (2002) Part I: Observations. *J. Phys. Oceanogr.* (In Press)

From COLA

Since 1993, COLA has produced over 550 papers that have appeared or are currently in review in the peer-reviewed literature or were submitted as Ph.D. dissertations. Of these, 87 papers have appeared or were submitted during 2011. Authors who are COLA scientists are shown in bold. Papers that made use of the NCEP CFS or CFSv2 models (or GFS) are indicated with “(CFS)”, papers that made use of the NCAR CCSM or CESM are indicated with “N”, and papers with a multi-model focus are indicated with “M”. Project Athena papers are indicated with “A”. Please note that publication status of some of the papers labeled “in press” may have changed to “appeared” within the past 3 months since this list was last updated.

177. (CFS) Achuthavarier, D., and V. Krishnamurthy, 2011a: Daily modes of South Asian summer monsoon variability in the NCEP Climate Forecast System. *Climate Dyn.* 36, 1941-1958.
178. (CFS) Achuthavarier, D., and V. Krishnamurthy, 2011b: Role of sea surface temperature in the Indian and Pacific Oceans in the Indian summer monsoon intraseasonal variability. *J. Climate* (in press), doi:10.1175/2010JCLI3639.1
179. (CFS) Achuthavarier, D., V. Krishnamurthy, B. P. Kirtman, and B. Huang, 2011: Role of Indian Ocean in the relationship between the ENSO and the South Asian monsoon in the NCEP CFS. *J. Climate* (accepted).
180. Arsenault, K. 2011: Impact of model and observation error on assimilating snow cover fraction observations. Ph.D. Dissertation, George Mason University.
181. Bagley, J. E., A. R. Desai, P. A. Dirmeyer, and J. A. Foley, 2011: Effects of land cover change on precipitation and crop yield in the world’s breadbaskets. *Env. Res. Lett.* (in press).
182. Bao, Z.-H., R. Kelly, and R. Wu, 2011: Variability of regional snow cover in spring over western Canada and its relationship to temperature and circulation anomalies. *Int. J. Climatol.* (in press), DOI:10.1002/joc.2155.
183. Chang, E.-C., S.-W. Yeh, S.-Y. Hong, and R. Wu, 2011: The role of air-sea interaction over the Indian Ocean in the in-phase transition from the Indian summer monsoon to the Australian boreal winter monsoon. *J. Geophys. Res.*, 116, D01107, doi:10.1029/2010JD014522.

184. Chen, G., Y. Ming, N. Singer and J. Lu, 2011: Testing the Clausius-Clapeyron constraint on the aerosol-induced changes in mean and extreme precipitation. *Geophys. Res. Lett.*, 38, doi:10.1029/2010GL046435.
185. De Lannoy, G. J. M., J. Ufford, A. K. Sahoo, P. R. Houser, and P. A. Dirmeyer, 2011: Observed and simulated water and energy budget components at SCAN sites in the lower Mississippi Basin. *Hydrol. Proc.*, 25, 634-649.
186. DelSole, T., M. K. Tippett, and J. Shukla, 2011a: A Significant Component of Unforced Multidecadal Variability in the Recent Acceleration of Global Warming. *J. Climate*, 24, 909-926. “M”
187. DelSole, T., and X. Yang, 2011: Field Significance of Regression Patterns. *J. Climate*, 24, 5094–5107.
188. DeMott, C. A., D. A. Randall, C. Stan, J. L. Kinter III, and M. Khairoutdinov, 2011: The Asian Monsoon in the Super-Parameterized CCSM and its Relationship to Tropical Wave Activity. *J. Climate*, 24, 5134-5156. doi: 10.1175/2011JCLI4202.1. “N”
189. Dirmeyer, P. A., 2011: A history of the Global Soil Wetness Project (GSWP). *J. Hydrometeor.*, 12, 729-749, doi: 10.1175/JHM-D-10-05010.1.
190. Dirmeyer, P. A., 2011: The terrestrial segment of soil moisture-climate coupling. *Geophys. Res. Lett.*, 38, L16702, doi: 10.1029/2011GL048268.
191. Dirmeyer, P. A. B. A. Cash, J. L. Kinter III, T. Jung, L. Marx, M. Satoh, C. Stan, H. Tomita, P. Towers, N. Wedi, D. Achuthavarier, J. M. Adams, E. L. Altshuler, B. Huang, E. K. Jin, and J. Manganello, 2011b: Simulating the diurnal cycle of rainfall in global climate models: Resolution versus parameterization. *Climate Dyn.* doi: 10.1007/s00382-011-1127-9. “A”
192. Dirmeyer, P. A., T. DelSole and M. Zhao, 2011c: Limits to the impact of data assimilation on simulation of the water cycle. *J. Hydrometeor.*, 12, 147–156.
193. Fan, M. and E. K. Schneider, 2011: Observed decadal North Atlantic tripole SST variability. Part I: Weather noise forcing and coupled response. *J. Atmos. Sci.* (in press). “N”
194. Feng, X., T. DelSole, and P. Houser, 2011a: Bootstrap Estimated Seasonal Potential Predictability of Global Temperature and Precipitation. *Geophys. Res. Lett.*, 38, L07702, doi:10.1029/2010GL046511.
195. Feng, X., T. DelSole, and P. Houser, 2011b: Methods for estimating potential seasonal predictability. Part I: Analysis of Covariance. *J. Climate* (in press).

196. Fennelly, M. J., and J. L. Kinter III, 2011: Climatic feedbacks during the 2003 European heatwave. *J. Climate*, (early release), doi: 10.1175/2011JCLI3523.1. “N”
197. (CFS) Gao, H., S. Yang, A. Kumar, Z.-Z. Hu, B. Huang, Y. Li, and B. Jha, 2011: Variations of the East Asian Mei-yu and simulations and prediction by the NCEP Climate Forecast System. *J. Climate*, 24, 94-108.
198. Guo, Z., P. A. Dirmeyer and T. DelSole, 2011a: Land surface impacts on subseasonal and seasonal predictability. *Geophys. Res. Lett.*, 38, L24812, doi:10.1029/2011GL049945. “M”
199. Guo, Z., P. A. Dirmeyer, and T. DelSole, and R. D. Koster, 2011b: Rebound in atmospheric predictability and the role of the land surface. *J. Climate* (accepted). “M”
200. (CFS) Hu, Z.-Z., B. Huang, Y.-T. Hou, W. Wang, F. Yang, C. Stan, and E. K. Schneider, 2011a: Sensitivity of tropical mean climate to prescribed low-level clouds in the NCEP CFS. *Climate Dyn.*, 36, 1795-1811.
201. (CFS) Hu, Z.-Z., B. Huang, J. L. Kinter III, Z. Wu, and A. Kumar, 2011b: Connection of stratospheric QBO with global atmospheric general circulation and tropical SST. Part II: Interdecadal variations. *Climate Dyn.*, doi 10.1007/s00382-011-1073-6.
202. Hu, Z.-Z., A. Kumar, B. Huang, Y. Xue, and W. Wang, 2011c: Persistent oceanic anomalies in the North Atlantic from summer 2009 to spring 2010. *J. Climate*, 24, 5812-5830.
203. Hu, Z.-Z., A. Kumar, B. Jha, and B. Huang, 2011d: An analysis of forced and internal variability in a winter climate in CCSM3. *J. Climate*, DOI: 10.1175/JCLI-D-11-00323.1. “N”
204. (CFS) Hu, Z.-Z., A. Kumar, B. Jha, W. Wang, Bohua Huang, and Boyin Huang, 2011e: An analysis of warm pool and cold tongue El Niño events: coupled interactions, atmospheric response, and recent trends. *Climate Dyn.* doi: 10.1007/s00382-011-1073-6.
205. (CFS) Huang, B., Z.-Z. Hu, J. L. Kinter III, Z. Wu and A. Kumar, 2011a: Connection of Stratospheric QBO with Global Atmospheric General Circulation and Tropical SST. Part I: Methodology and Composite Life Cycle. *Climate Dyn.* 18, 1-23.
206. (CFS) Huang, B., Z.-Z. Hu, E. K. Schneider, Z. Wu, Y. Xue, B. Klinger, 2011b: Influences of subtropical air-sea interaction on the multidecadal AMOC

- variability in the NCEP Climate Forecast System. *Climate Dyn.* doi: 10.1007/s00382-011-1258-z.
207. Jang, Y., 2011: The Atmospheric Influence of Tropical Diabatic Heating Associated with Developing ENSO on Indian Monsoon. Ph.D. Dissertation, George Mason University. “N”
208. Jia, L., 2011: Robust Multi-Year Predictability on Continental Scales. Ph.D. Dissertation, George Mason University. “M”
209. Jia, L. and T. DelSole, 2011a: Diagnosis of multi-year predictability on continental scales. *J. Climate*, 24, 5108–5124. “M”
210. Jiménez, C., C. Prigent, B. Mueller, S. I. Seneviratne, M. F. McCabe, E. F. Wood, W. B. Rossow, G. Balsamo, A. K. Betts, P. A. Dirmeyer, J. B. Fisher, M. Jung, M. Kanamitsu, R. H. Reichle, M. Reichstein, M. Rodell, J. Sheffield, K. Tu, and K. Wang, 2011: Global inter-comparison of 12 land surface heat flux estimates. *J. Geophys. Res.*, 116, D02102, doi:10.1029/2010JD014545. “M”
211. Jung, T., M. J. Miller, T. N. Palmer, P. Towers, N. Wedi, D. Achuthavarier, J. M. Adams, E. L. Altshuler, B. A. Cash, J. L. Kinter III, L. Marx, C. Stan, K. I. Hodges, 2011: High-Resolution Global Climate Simulations with the ECMWF Model in the Athena Project: Experimental Design, Model Climate and Seasonal Forecast Skill. *J. Climate*, doi:10.1175/JCLI-D-11-00265.1. “A”
212. Kirtman, B. P., E. K. Schneider, D. M. Straus, D. Min, and R. Burgman, 2011b: How weather impacts the forced climate response. *Climate Dyn.* 37, 2389–2416, doi:10.1007/s00382-011-1083-3. “N”
213. Koster, R. D., S. P. P. Mahanama, T. J. Yamada, G. Balsamo, A. A. Berg, M. Boisserie, P. A. Dirmeyer, F. J. Doblas-Reyes, G. Drewitt, C. T. Gordon, Z. Guo, J.-H. Jeong, W.-S. Lee, Z. Li, L. Luo, S. Malyshev, W. J. Merryfield, S. I. Seneviratne, T. Stanelle, B. J. J. M. van den Hurk, F. Vitart, and E. F. Wood, 2011: The second phase of the Global Land- Atmosphere Coupling Experiment: Soil moisture contributions to subseasonal forecast skill. *J. Hydrometeor.*, 12, 805–822.”M”
214. Krishnamurthy, V., 2011: Extreme events and trends in the Indian summer monsoon. AGU Geophysical Monograph on Complexity and Extreme Events in Geosciences (in press).
215. Krishnamurthy, V., and D. Achuthavarier, 2011: Intraseasonal Oscillations of the Monsoon Circulation over South Asia. *Climate Dyn.* (accepted).

216. (CFS) Krishnamurthy, V., and S. Rai, 2011: Predictability of South Asian Monsoon circulation in the NCEP Climate Forecast System. *Adv. Geosci.*, 22, 65-76.
217. (CFS) Kumar, A., M. Chen, L. Zhang, W. Wang, Y. Xue, C. Wen, L. Marx, B. Huang, 2011: An analysis of the non-stationarity in the bias of sea surface temperature forecasts for the NCEP Climate Forecast System (CFS) Version 2. *Mon. Wea. Rev. (accepted)*.
218. Lee, S.-S., J.-Yi Li, B. Wang, K.-J. Ha, F.-F. Jin, D. M. Straus, and J. Shukla, 2011: Interdecadal changes in the storm track activity over the North Pacific and North Atlantic. *Climate Dyn.* DOI:10.1007/s00382-011-1188-9.
219. Lu, J., M. Zhang, B. Cash, and S. Li, 2011: Oceanic forcing for the East Asian rainfall in pace-making AGCM experiments. *Geophys. Res. Lett.* 38, L12702, doi:10.1029/2011GL047614
220. Manganello, J. V., K. I. Hodges, J. L. Kinter III, B. A. Cash, L. Marx, T. Jung, D. Achuthavarier, J. M. Adams, E. L. Altshuler, B. Huang, E. K. Jin, C. Stan, P. Towers and N. Wedi, 2011: Tropical Cyclone Climatology in a 10-km Global Atmospheric GCM: Toward Weather-Resolving Climate Modeling. *J. Climate* doi:10.1175/JCLI-D-11-00346.1 (in press). “A”
221. Molteni, F., M. P. King, F. Kucharski, and D. M. Straus, 2011: Planetary-scale variability in the northern winter and the impact of land-sea thermal contrast. *Climate Dyn.*, 37, 151-170. doi: 10.1007/s00382-010-0906-z.
222. Pan, X., B. Huang, and J. Shukla, 2011: Sensitivity of the tropical Pacific seasonal cycle and ENSO to changes in mean state induced by a surface heat flux adjustment in CCSM3. *Climate Dyn.*, 37, 325-341, DOI 10.1007/s00382-010-0923-y. “N”
223. Paolino, D. A., J. L. Kinter III, B. P. Kirtman, D. Min, and D. M. Straus, 2011: The impact of land surface and atmospheric initialization on seasonal forecasts with CCSM. *J. Climate*, doi: 10.1175/2011JCLI3934.1 (in press). “N”
224. (CFS) Rai, S. and V. Krishnamurthy, 2011: Error Growth in CFS Daily Retrospective Forecasts of South Asian Monsoon. *J. Geophys. Res.*, 116, D03108, doi:10.1029/2010JD014840.
225. Satoh, M., K. Oouchi, T. Nasuno, H. Taniguchi, Y. Yamada, H. Tomita, C. Kodama, J. L. Kinter III, D. Achuthavarier, J. Manganello, B. Cash, T. Jung, T. Palmer, and N. Wedi, 2011: Intra-Seasonal Oscillation and its control of tropical cyclones simulated by high-resolution global atmospheric models. *Climate Dyn.*, doi10.1007/s00382-011-1235-6.

226. Schneider, E. K. and M. Fan, 2011: Observed decadal North Atlantic tripole SST variability. Part II: Diagnosis of mechanisms. *J. Atmos. Sci.* (in press). “N”
227. Solomon, A. G. Chen and J. Lu, 2011: Finite-amplitude Lagrangian-mean wave activity applied to the baroclinic eddy life-cycle. *J. Atmos. Sci.* (accepted).
228. Staten, P., J. J. Rutz, T. Reichler, and J. Lu, 2011: Breaking down the tropospheric response by forcing. *Clim Dyn.* (in press).
229. Wei, J., P. A. Dirmeyer, M. G. Bosilovich, and R. Wu, 2011: Water vapor sources for Yangtze River Valley rainfall: Climatology, variability, and implications for rainfall forecasting, *J. Geophys. Res.*, doi:10.1029/2011JD016902 (in press).
230. (CFS) Wu, R., and J. L. Kinter III, 2011: Shortwave radiation-SST relationship over the mid-latitude North Pacific during boreal summer in climate models. *Clim. Dyn.*, 36, 2251-2264, doi: 10.1007/s00382-010-0775-5.
231. Wu, R., and B. P. Kirtman, 2011: Caribbean Sea rainfall variability during the rainy season and relationship to the equatorial Pacific and tropical Atlantic SST. *Clim. Dyn.*, in press, DOI: 10.1007/s00382-010-0927-7.
232. Xu, L., 2011: Snow cover as a source of climate predictability: Mechanisms of snow-atmosphere coupling. Ph.D. Dissertation, George Mason University. “N”
233. Xu, L., and P. Dirmeyer, 2011a: Snow-atmosphere coupling strength in a global atmospheric model. *Geophys. Res. Lett.*, 38, L13401, doi:10.1029/2011GL048049. “N”
234. Yang, X., and T. DelSole, 2011: Systematic Comparison of ENSO Teleconnection Patterns Between Models and Observations. *J. Climate*, 25, 425-446. “M”
235. Yilmaz, M., T. DelSole, and P. R. Houser, 2011b: Improving Land Data Assimilation Performance with a Water Budget Constraint. *J. Hydrometeor.*, 12, 1040-1055.
236. (CFS) Zhang, L. P. A. Dirmeyer, J. Wei, Z. Guo and C.-H. Lu, 2011a: Land-atmosphere Coupling Strength in the Global Forecast System, *J. Hydrometeor.*, 12, 147–156.
237. Zhang, R.-H., F. Zheng, J. Zhu, Y. Pei, Q. Zheng, and Z. Wang, 2011c: Modulation of El Niño-Southern Oscillation by Freshwater Flux and Salinity Variability in the Tropical Pacific. *Adv. Atmos. Sci.* (accepted).

238. Zhu, J., B. Huang and M. Balmaseda, 2011a: An ensemble estimation of the variability of upper ocean heat content over the tropical Atlantic Ocean with multi-ocean reanalysis products. *Climate Dyn.* doi: 10.1007/s00382-011-1189-8 (published online).
239. Zhu, J., B. Huang, and Z. Wu, 2011c: The role of ocean dynamics in the interaction between the Atlantic meridional and equatorial modes. *J. Climate*, doi:10.1175/JCLI-D-11-00364.1.

COLA Technical Reports

The COLA Technical Report series continues to be a very useful way to convey research ideas and findings in a timely manner to scientific colleagues and agency representatives. There were 9 technical reports produced during the reporting period, listed below. In addition, COLA scientists have published reports in the NOAA/NWS Climate Science and Technology Infusion Bulletin.

240. Achuthavarier, D., V. Krishnamurthy, B. P. Kirtman and B. Huang, 2011: Role of Indian Ocean in the ENSO-Indian summer monsoon teleconnection in the NCEP Climate Forecast System. COLA Tech. Rep. 309, 41 pp.
241. Huang, B., Z.-Z. Hu, E. K. Schneider, Z. Wu, Y. Xue, and B. Klinger, 2011: Influences of Subtropical Air-Sea Interaction on the Multidecadal AMOC Variability in the NCEP Climate Forecast System. COLA Tech. Rep. 310, 47 pp.
242. Krishnamurthy, V., 2011: Extreme Events and Trends in the Indian Summer Monsoon. COLA Tech. Rep. 314, 18 pp.
243. Krishnamurthy, V., and J. Shukla, 2011: Predictability of the Indian monsoon in coupled general circulation models. COLA Tech. Rep. 313, 45 pp.
244. Lu, J., and B. Zhao, 2011: The role of oceanic feedback in the climate response to doubling CO₂. COLA Tech. Rep. 315, 18 pp.
245. Narapusetty, B., C. Stan, B. P. Kirtman, P. S. Schopf, L. Marx and J. L. Kinter III, 2011: Coupling between atmospheric internal variability and tropical instability wave activity in the eastern equatorial Pacific.. COLA Tech. Rep., 316, 26 pp.
246. Zhu, J., B. Huang, and Z. Wu, 2011: The role of ocean dynamics in the interaction between the Atlantic meridional and equatorial modes. COLA Tech. Rep. 312, 18 pp.

247. Zhu, J., B. Huang, and M. A. Balmaseda, 2011: An ensemble estimation
of the variability of upper-ocean heat content over the tropical Atlantic Ocean
with multi-ocean reanalysis products. COLA Tech. Rep. 311, 47 pp.
248. Zhu, J., B. Huang, L. Marx, J. L. Kinter III, M. A. Balmaseda, R.-H.
Zhang and Z.-Z.Hu, 2012: Ensemble ENSO hindcasts initialized from multiple
ocean analyses.. COLA Tech. Rep., 317, 24 pp.